

# SmartWay Transport Partnership



**Western Region Clean Cities Webcast**  
**August 30, 2006**

Annie Kee  
U.S. Environmental Protection Agency

# Background

- **Currently, truck and rail:**
  - Travel over 200 billion miles
  - Consume over 35 billion gallons of fuel
  - Account for nearly 20% of transportation related energy use
  - Produce approximately 350 million metric tons of CO<sub>2</sub>

**2003**

**35 Billion Gallons**



**2012**

**45 Billion Gallons**



# Transportation Greenhouse Gas Emissions Continue to Increase

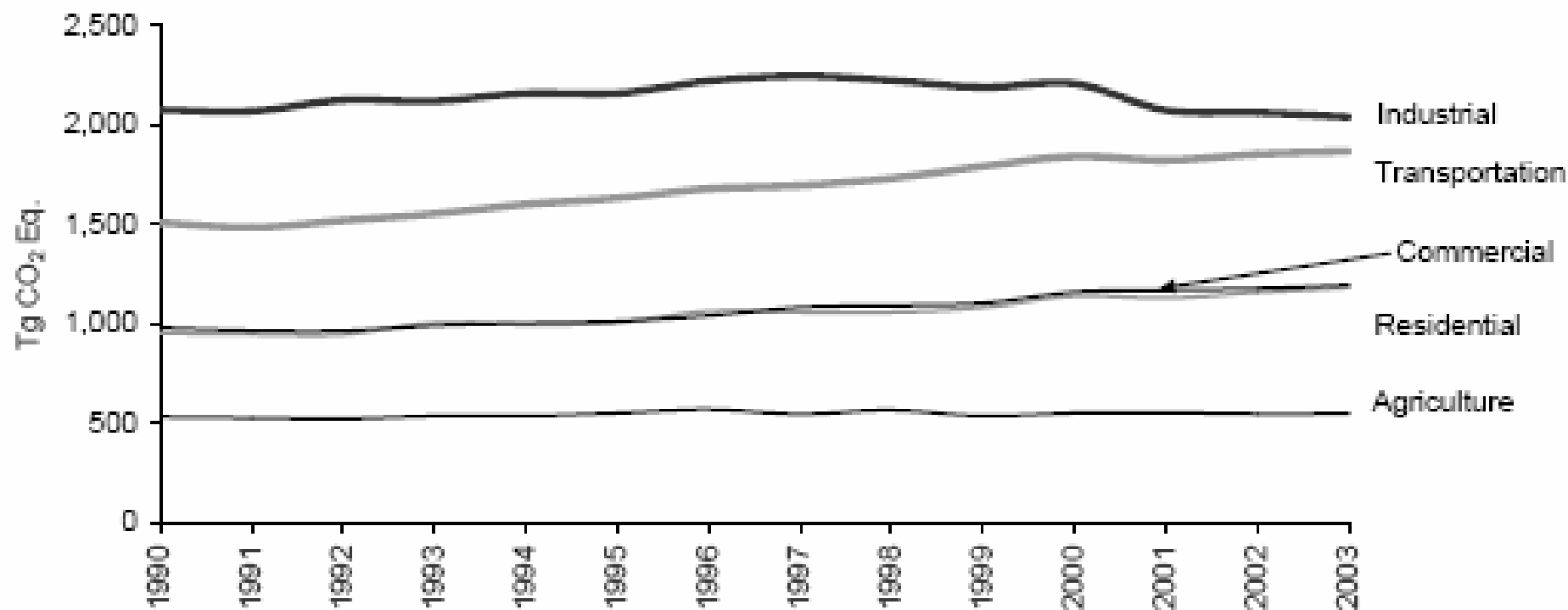
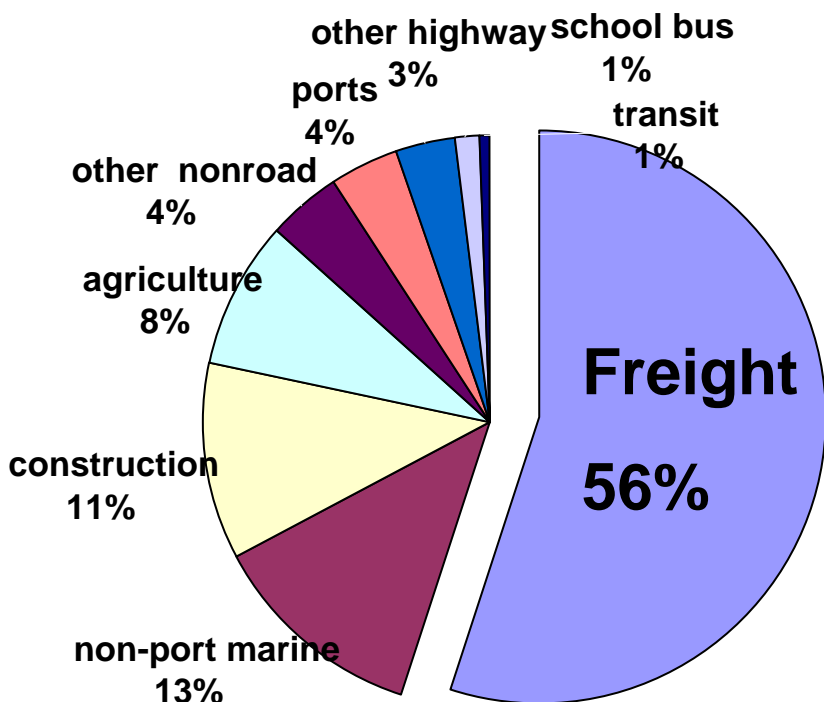


Figure 2-14: Emissions with Electricity Distributed to Economic Sectors

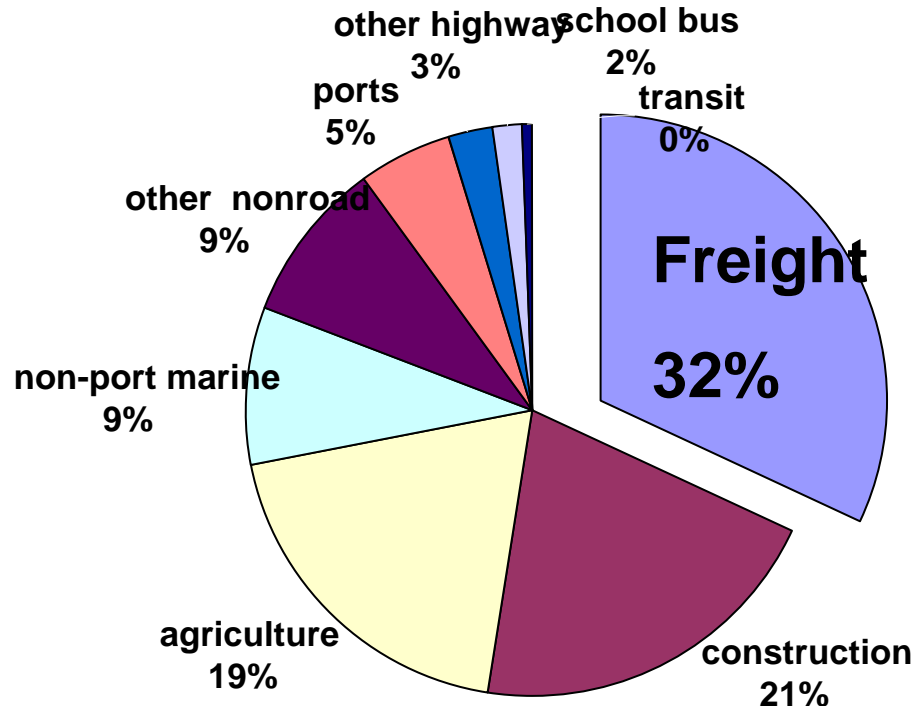
Source: US Emissions Inventory (April 2005)  
EPA 430-R-05-003

# Mobile Source Diesel Emissions Inventory by Sector (2004)

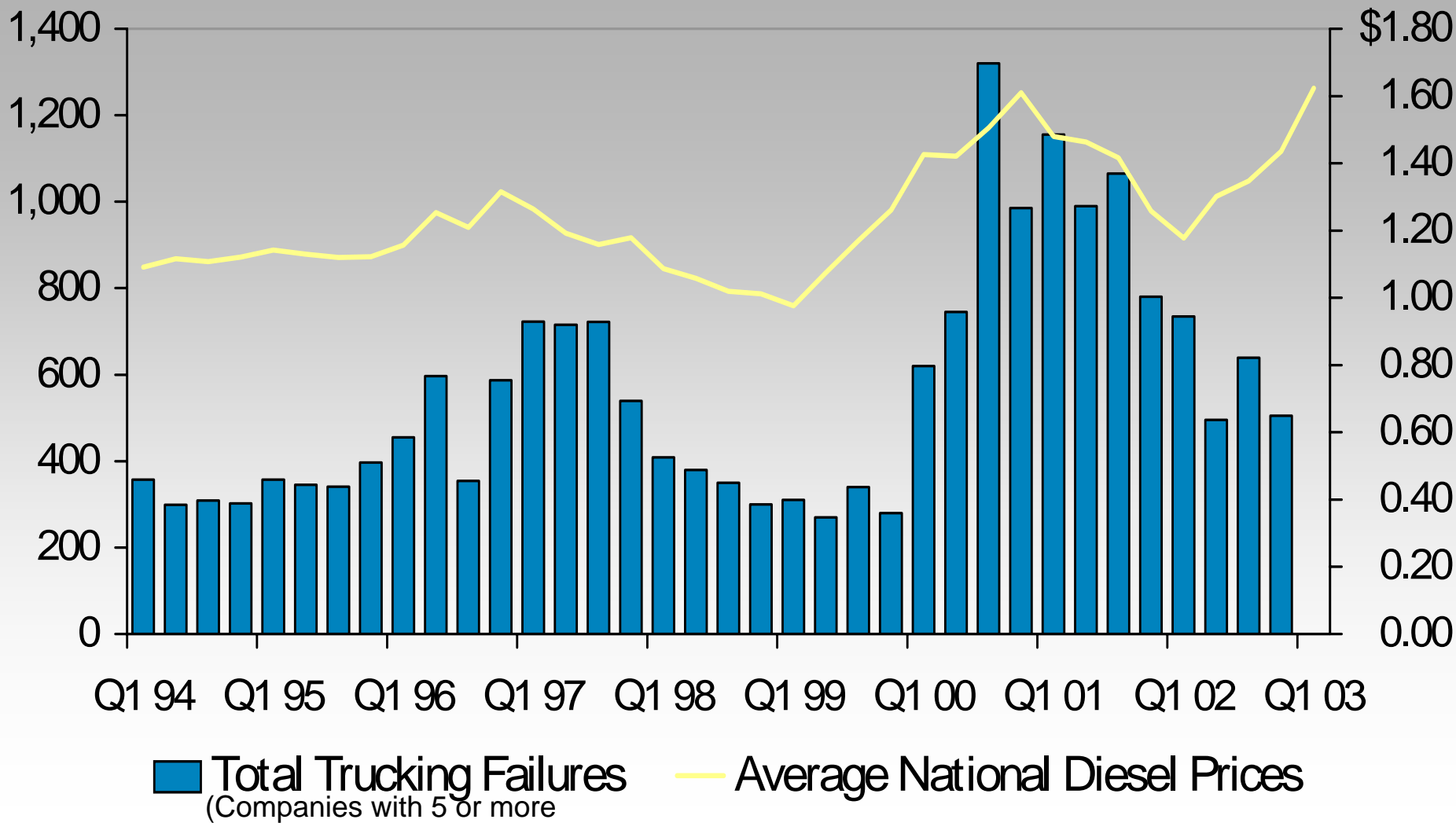
## **NO<sub>x</sub>** (6.3 million tons)



## **PM 2.5** (305,000 tons)



# Fuel Prices Impact on Industry



# How did SmartWay Transport Partnership begin?

- **Freight carrier goals**

- Reduced fuel consumption
- Public recognition
- Better public image
- Better relationship with government



- **EPA goals**

- Reduced CO2 emissions
- Improve energy security
- Better relationship with the freight industry

- **Freight shipper goals**

- Better understanding and control of supply chain & transportation footprint
- New ways to promote corporate citizenship and sustainable business practices

# What is the SmartWay Transport Partnership?

- **Voluntary partnership between EPA and the freight industry:**
  - Developed jointly by EPA and 15 Charter Partners
  - Launched February 9, 2004
  - No fees to participate, open to companies of all sizes
  - Opportunity for companies to enhance performance of freight operations & supply chains
  - Emission Reduction Goals
    - 150 million barrels of oil each year (12 million cars off the road)
    - 33-66 million metric tons CO<sub>2</sub> annually by 2012
    - 200,000 tons NO<sub>x</sub> annually, plus PM and air toxics reductions



# Major Components of SmartWay

- **Corporate Partnerships** – carriers and shippers working to reduce fuel consumption and emissions
- **National Transportation Idle-Free Corridors** – goal to eliminate unnecessary idling along major transportation routes
- **Rail/Intermodal** – promote greater use of appropriate intermodal strategies
- **Innovative Financing** – develop financing programs for technologies

# Benefits for the Environment

## Fuel Consumption, CO<sub>2</sub>, NO<sub>x</sub>, and PM

- **Lessen health impacts from diesel emissions:**
  - Exacerbates asthma, respiratory and cardiac illness
  - Possible human carcinogen
- **Improve air quality:**
  - 474 counties are out of compliance with the 8-hour ozone standard
  - 225 counties are out of compliance with the particulate matter standard
- **Lessen the impacts on our most vulnerable populations:**
  - Children, the elderly and people with existing health conditions
- **Reduce CO<sub>2</sub> emissions that contribute to climate change:**
  - Every gallon of diesel consumed creates 22.2 pounds of CO<sub>2</sub>
- **Improve energy security:**
  - Fuel prices, availability

# Benefits for Partners

- Shippers and Logistics Companies:
  - Better info about transportation footprint
  - Demonstrate corporate citizenship by hiring environmentally minded carriers
- Carriers:
  - Gain competitive advantage as shippers strive to move more goods with SmartWay Transport carriers
  - Track emissions and fuel consumption
  - Do cost benefit analyses for different technologies and/or strategies
- Affiliates:
  - Access to tools for marketing and outreach
  - Public recognition for promoting environmental goals

# How do Partners Measure Progress?

- **Freight Logistics Environmental and Energy Tracking Performance Model:**
  - Carriers:
    - Calculate tons of CO<sub>2</sub>, NO<sub>x</sub>, and PM
    - Determine effectiveness of strategies used in the fleet (e.g., aerodynamics, idling reduction)
    - Project the effectiveness of strategies a fleet could add in the future.
    - Estimate cost savings and payback period for strategies
  - Shippers:
    - Track percentage of freight shipped with SmartWay Transport Carrier Partners
    - Measure their environmental footprint

# Types of Carrier Strategies

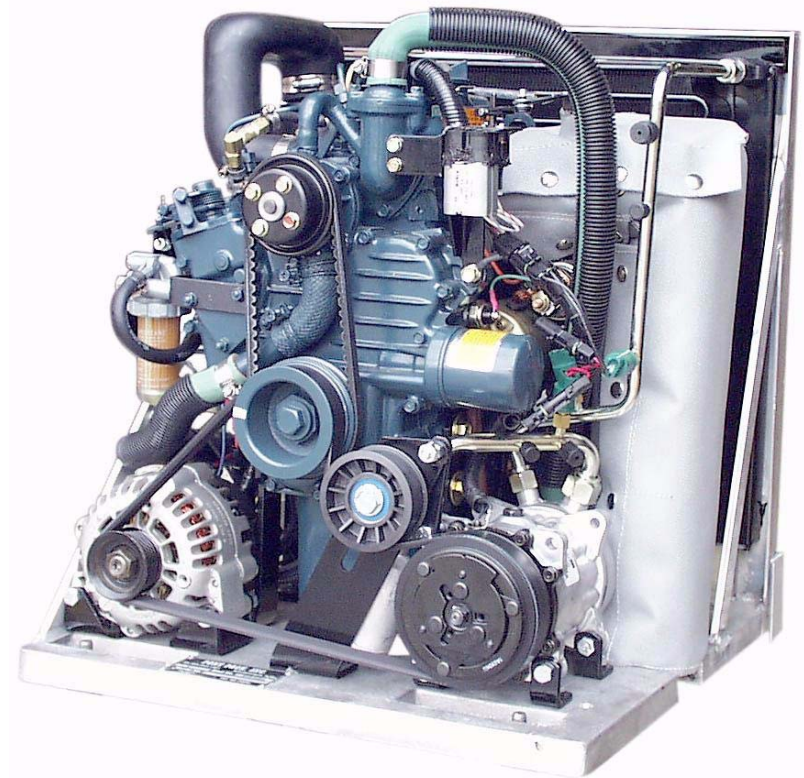
For both New and Existing Trucks & Locomotives

- Idling Reduction
- Improved Aerodynamics for tractors and trailers
- Low rolling resistance tires including super singles
- Speed management
- Automatic Tire Inflation
- Increased/improved intermodal operations
- Exhaust after-treatment devices
- Lightweight materials
- Advanced lubricants
- Alternative and sustainable fuels
- Hybrid technologies

# Bunk Heaters and Air Conditioners



# Auxiliary Power Units



# Truck Stop Electrification



# Advanced Truck Stop Electrification



# Aerodynamics

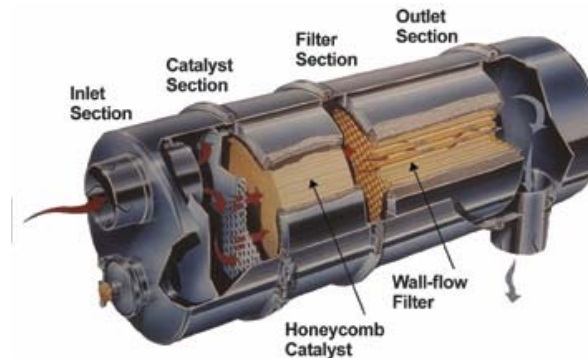


# Single Wide Tires



# Exhaust After-treatment Devices

- Diesel Oxidation Catalysts
  - Estimated cost: \$1,000
  - Reduce PM by 25% – 40%
- Particulate Matter Filters
  - Estimated cost \$5,000
  - Costs expected to drop sharply after 2007
  - Reduce PM by 80% – 90%



# Types of Shipper Strategies

- Shippers ship more freight with SmartWay Transport Carriers
- Shippers implement facility and operational measures to improve efficiency
  - Use of Intermodal Shipping
  - Full Truckloads
  - Idle Reduction Policies at Loading Facilities



**ATTENTION DRIVERS:**

  
IS A MEMBER OF THE  
EPA'S SMARTWAY TRANSPORT PARTNERSHIP.

**GREEN MOUNTAIN HAS AN  
IDLE REDUCTION POLICY.**

PLEASE TURN OFF YOUR ENGINES  
WHILE ON SITE AWAITING  
TO BE LOADED/UNLOADED.

  
U.S. ENVIRONMENTAL PROTECTION AGENCY

THANK YOU FOR  
HELPING US WORK TOWARDS A  
CLEANER ENVIRONMENT.

# Market Driven Diesel Reduction Strategies

## Identifying Business Cases and Creative Strategies

- Many companies lack the capital to invest in innovative technologies
- To assist them, SmartWay is working with states, local energy offices, private financial institutions to create innovative financing strategies
- SmartWay Upgrade Kits
  - Packages together fuel efficient and emissions reducing technologies
- SmartWay Financial Calculator
  - Simple, interactive calculator to demonstrate savings and positive cash flow
  - [www.epa.gov/smartway/calculator/loancalc.htm](http://www.epa.gov/smartway/calculator/loancalc.htm)

# SmartWay Upgrade Kits

## Creating a Business Case for Diesel Emission Reductions

Example of a SmartWay Upgrade Kit for Long Haul Trucks:

Device	Cost/Unit (Retrofit)*	PM Reduction	NOx Reduction	FE/CO <sub>2</sub> Change
Diesel Oxidation Catalyst	<b>\$1,200</b>	<b>25%</b>	--	--
Super Single Tires w/ alum. wheels	<b>\$5,600</b>	--	<b>4%</b>	<b>4%</b>
Trailer Aero Kit	<b>\$2,400</b>	--	<b>5%</b>	<b>5%</b>
Direct Fired Heater	<b>\$1,500</b>	--	<b>6%</b>	<b>6%</b>
<b>Totals:</b>	<b>\$10,700</b>	<b>25%</b>	<b>15%</b>	<b>15%</b>

For a truck traveling 100,000 miles/year @ 6 mpg (16,667 gallons /year)

- Fuel savings: 2,333 gallons @ \$2.80/gallon → **\$6,354/year**
- Payback period: \$10,700 / \$6,354 → **~1.7 years**
- or a 4 year loan @ 9% APR:

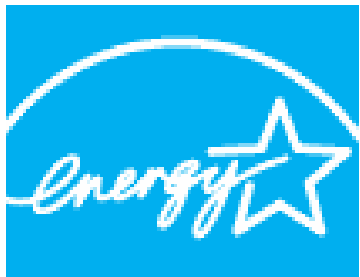
Monthly Fuel Savings:	\$530
Monthly Loan Payment:	(\$266)
<b>Monthly Cash for Driver:</b>	<b>\$264</b>

# Creating Sustainable Deployment Program

- **Build Innovative Public/Private Financing Programs**
  - **Private**: Work with banks, financial institutions, OEMs, ESCOs to develop innovative financial opportunities for:
    - Low interest loans
    - Revolving loans
    - Performance contracting
    - Leases
  - **Public**: Work with DERA funds, State Infrastructure Banks (SIBs), federal/state/local government loans, loan guarantee programs
- **Create Demand for the Technologies**
  - Educate users about the financial benefits of SmartWay Upgrade Kits and the availability of innovative financial opportunities
  - Promote benefits and financial opportunities through partnerships

# Marketing SmartWay

- The SmartWay Transport logo
  - The EPA SmartWay logo is a mark of Cleaner transportation
  - The SmartWay Transport Partnership, a collaboration with the freight industry, is the first utilization of this logo
  - Like the EPA Energy Star recognizes energy efficiency in commercial products, the EPA SmartWay Transport Partner logo identifies to the public and potential carrier employers that the company is a highly performing environmental company



# PSA Campaign

## SHIP SMARTER



**An environmentally appealing way to transport goods that's also deliciously profitable.**

SmartWay<sup>®</sup>Transport helps shippers and for-hire carriers lower greenhouse gases and other emissions, while at the same time giving the average truck a fuel savings of \$2,000 per year.

To find out more about this new partnership, call for your info kit at **1-734-214-4767** or log onto **[www.epa.gov/smartway](http://www.epa.gov/smartway)**.



A new voluntary program from the  
U.S. Environmental Protection Agency

## CALCULATE YOUR SAVINGS TO THE ENVIRONMENT. TO YOUR BOTTOM LINE.



**For logistics managers, SmartWay<sup>®</sup> can add up to 7% in fuel savings.**

SmartWay<sup>®</sup>Transport helps shippers and for-hire carriers lower greenhouse gases and other emissions, while at the same time giving the average truck a fuel savings of \$2,000 per year.

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# SmartWay Transport Partnership Today

- **About 450 Partners in 41 U.S. states and Canada**
  - 9 of Transport Topics Top 20 For-Hire Carriers
  - Represent nearly 5 percent of the trucking industry, with over 300,000 tractors and 500,000 trailers traveling over 14 billion miles per year.
- **Shippers incorporating SmartWay participation into carrier hiring decisions**
  - IKEA North America and Sharp Electronics moving to 100% shipping with SmartWay Partners
- **Developing plans to allow the SmartWay logo to be put on low-emission, high fuel-efficiency trucks**

# SmartWay Resources & Info

- General information, fact sheets:
  - [www.epa.gov/smartway/swresources.htm](http://www.epa.gov/smartway/swresources.htm)
- Joining SmartWay:
  - [www.epa.gov/smartway/partnerships.htm](http://www.epa.gov/smartway/partnerships.htm)
- Latest News:
  - [www.epa.gov/smartway/newsandevents.htm](http://www.epa.gov/smartway/newsandevents.htm)
- Current List of Partners:
  - [www.epa.gov/smartway/partners.htm](http://www.epa.gov/smartway/partners.htm)
- Idling Reduction Technologies:
  - [www.epa.gov/smartway/idlingalternatives.htm](http://www.epa.gov/smartway/idlingalternatives.htm)



**[www.epa.gov/smartway](http://www.epa.gov/smartway)**

**[smartway\\_transport@epa.gov](mailto:smartway_transport@epa.gov)**

**phone center (734) 214-4767**

**Annie Kee, 202-343-9218, [kee.annie@epa.gov](mailto:kee.annie@epa.gov)**